DOCUMENT RESUME

ED 333 656 EC 300 412

AUTHOR	Polsgrove, Lewis, Ed.
TITLE	Reducing Undesirable Behaviors. Working with Behavioral Disorders: CEC Mini-Library.
INSTITUTION	Council for Exceptional Children, Reston, Va.
REPORT NO	ISBN-0-86586-201-X
PUB DATE	91
NOTE	42p.; For other documents in this set, see EC 300 409-417.
AVAILABLE FROM	Council for Exceptional Children, Publication Sales, 1920 Association Dr., Reston, VA 22091 ($8.90 each, $72.00 set of nine; members, $6.25 each, $50.00 set; stock no. P342).
PUB TYPE	Guides - Non-Classroom Use (055)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Behavior Change; *Behavior Disorders; Behavior Modification; *Behavior Problems; Classroom Techniques; Elementary Secondary Education; Punishment; Reinforcement; Timeout
IDENTIFIERS	Aversive Stimuli

ABSTRACT

This booklet reviews the literature and offers procedures to reduce undesirable behavior in school settings. The following topics are addressed: definition of terms relating to behavior reduction procedures; environmental modification (changing the demands of a task, reducing the complexity of each step, or teaching a new skill); differential reinforcement (reinforcing appropriate behavior while ignoring inappropriate behavior); response cost (removing a positive reinforcer when an inappropriate behavior is displayed); timeout (removing the child for a short period from all reinforcement opportunities); overcorrection (the "disrupter" restores the situation and practices an appropriate behavior); aversive conditioning (undesirable stimuli are used to reduce undesirable behavior); corporal punishment; and research findings (research does not provide clear direction on when to use specific behavior reduction procedures). The last section presents recommendations including: obtain prior consent; try less aversive strategies first; follow appropriate protocol; write a detailed plan; use trained personnel; and keep track of effectiveness. Appended is the policy statement of the Council for Children with Behavioral Disorders on the use of behavior reduction procedures. Includes 93 references. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED333656

CEC Mini-Library
Working with Behavioral Disorders

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

REDUCING UNDESIRABLE BEHAVIORS

Edited by
Lewis Polsgrove

EC 300442

CEC

2

CEC Mini-Library

Working with Behavioral Disorders

REDUCING UNDESIRABLE BEHAVIORS

Edited by
Lewis Polsgrove

Published by The Council for Exceptional Children

3

Library of Congress Cataloging-in-Publication Data

Polsgrove, Lewis.
Reducing undesirable behaviors / Lewis Polsgrove.
p. cm. — (Working with behavioral disorders)
CEC mini-library
Includes bibliographical references.
ISBN 0-86586-201-X
1. Problem children—Education—United States. 2. Behavior disorders in children—United States. 3. Behavior modification. 4. Special education—United States. I. Title. II. Series.
LC4802.P65 1991
371.93—dc20 91-9005
CIP

ISBN 0-86586-201-X

Copyright 1991 by The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091-1589.
Stock No. P342

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the copyright owner.

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1 4

Contents

Foreword, v

Introduction, 1

1. **Definition of Terms, 3**
   Behavior reduction procedures refer to a continuum of strategies used to reduce inappropriate behaviors.
2. **Environmental Modification, 4**
   Procedures may involve changing the demands of a task, reducing the complexity of each step, or teaching a new skill that will help the child perform the task without frustration.
3. **Differential Reinforcement, 5**
   Procedures involve reinforcing appropriate behavior while ignoring inappropriate behavior.
4. **Response Cost, 8**
   Procedures involve removing a positive reinforcer when an inappropriate behavior is displayed.
5. **Timeout, 9**
   This procedure removes the child for a short period of time from all reinforcement opportunities.
6. **Overcorrection, 11**
   These strategies require the "disrupter" to restore the environment to an orderly and improved state and to practice an appropriate behavior for the situation.

7. **Aversive Conditioning, 12**
Painful, distasteful, or undesirable stimuli are used to reduce undesirable behavior.

8. **Corporal Punishment, 15**
Corporal punishment refers to hitting or otherwise inflicting pain on an individual.

9. **Research Findings, 16**
Current research does not provide a clear direction on when or where to use specific behavior reduction procedures.

10. **Recommendations, 17**
Recommendations for using behavior reduction procedures advise obtaining prior consent, trying less aversive strategies first, following appropriate protocol, writing a detailing plan, using trained personnel, and keeping track of effectiveness.

References, 22

Appendix, 30
Council for Children with Behavioral Disorders Policy Statement on the Use of Behavior Reduction Procedures.

Foreword

Working with Behavioral Disorders CEC Mini-Library

One of the greatest underserved populations in the schools today is students who have severe emotional and behavioral problems. These students present classroom teachers and other school personnel with the challenges of involving them effectively in the learning process and facilitating their social and emotional development.

The editors have coordinated a series of publications that address a number of critical issues facing service providers in planning and implementing more appropriate programs for children and youth with severe emotional and behavioral problems. There are nine booklets in this Mini-Library series, each one designed for a specific purpose.

- *Teaching Students with Behavioral Disorders: Basic Questions and Answers* addresses questions that classroom teachers commonly ask about instructional issues, classroom management, teacher collaboration, and assessment and identification of students with emotional and behavioral disorders.
- *Conduct Disorders and Social Maladjustments: Policies, Politics, and Programming* examines the issues associated with providing services to students who exhibit externalizing or acting-out behaviors in the schools.
- *Behaviorally Disordered? Assessment for Identification and Instruction* discusses systematic screening procedures and the need for functional assessment procedures that will facilitate provision of services to students with emotional and behavioral disorders.

- *Preparing to Integrate Students with Behavioral Disorders* provides guidelines to assist in the integration of students into mainstream settings and the delivery of appropriate instructional services to these students.
- *Teaching Young Children with Behavioral Disorders* highlights the applications of Public Law 99–457 for young children with special needs and delineates a variety of interventions that focus on both young children and their families.
- *Reducing Undesirable Behaviors* provides procedures to reduce undesirable behavior in the schools and lists specific recommendations for using these procedures.
- *Social Skills for Students with Autism* presents information on using a variety of effective strategies for teaching social skills to children and youth with autism.
- *Special Education in Juvenile Corrections* highlights the fact that a large percentage of youth incarcerated in juvenile correctional facilities has special learning, social, and emotional needs. Numerous practical suggestions are delineated for providing meaningful special education services in these settings.
- *Moving On: Transitions for Youth with Behavioral Disorders* presents practical approaches to working with students in vocational settings and provides examples of successful programs and activities.

We believe that this Mini-Library series will be of great benefit to those endeavoring to develop new programs or enhance existing programs for students with emotional and behavioral disorders.

Lyndal M. Bullock
Robert B. Rutherford, Jr.

Introduction

A primary task of teachers and others serving children with behavioral and emotional disabilities is to facilitate their academic and social development and to ameliorate behaviors that may reduce their access to free, successful, and happy lives. In a democratic society, in which educational and behavioral standards are loosely defined, the responsibility for socializing these youngsters often falls to child-care professionals. Independent of their personal orientation, background, values, and other variables, special educators and other practitioners devote considerable energy to teaching these youngsters skills that will enable them to gain acceptance and to function independently in integrated environments.

One approach frequently used by practitioners to manage children's inappropriate, disruptive, aggressive, and destructive behaviors draws from techniques derived from social learning theory and applied behavior analysis (Bandura, 1969; Cullinan, Epstein, & Kauffman, 1982; Nelson, C.M., & Polsgrove, 1984; Simpson & Regan, 1986). Defined broadly, the behavioral approach involves analyzing and arranging environmental variables to accelerate or decelerate children's observable behavior. Because of their utility and proven effectiveness with children and adolescents with behavioral and emotional disabilities (Kerr & Nelson, 1989; Koegel, Rincover, & Russo, 1982), these strategies are widely used and accepted, even by those who deny a formal affiliation with behavioral methodology. In recent years, however, considerable and often acrimonious controversy has developed among professionals, parents, legislators, advocacy groups, government agencies, and others over which behavior reduction procedures, under what conditions, should be employed to manage problem behaviors of children and youth with disabilities.

Concern over the moral and ethical appropriateness of aversive behavior reduction procedures has prompted the passage of resolutions by national advocacy groups, such as the Association for Persons with Severe Handicaps (TASH), the American Association on Mental Retardation (AAMR), and the Association for Retarded Citizens (ARC), calling for a cessation in the use of these techniques. Several recent books and monographs have sharply criticized the use of more aversive and restrictive behavior reduction practices on grounds that they only suppress problem behaviors, that they do not produce durable effects, and that their treatment effects do not generalize to other settings. In general, these sources have concluded that "nonaversive" techniques (those that do not produce pain or discomfort), skills training approaches (those that strengthen alternative behavioral skills), and environmental modification procedures (those that alter environmental variables) are *all* that are required to manage problem behaviors. Some have questioned the moral integrity and ethics of behavioral scientists and practitioners who continue to employ aversive, intrusive, and restrictive practices in the face of these data (Guess, Helmstetter, Turnbull, & Knowlton, 1987; LaVigna & Donnellan, 1986; McGee, Menolascino, Hobbs, & Menousek, 1987). This position and related advocacy efforts have stirred bitter debate in the media, professional literature, public forums, and the courts concerning the issue of appropriate intervention of problem behaviors of children with disabilities.

Those who have taken issue with the nonaversive position are professionals, practitioners, parents, agencies, and advocacy groups who disagree that nonaversive, skills-oriented, and environmental modification procedures independently represent an effective technology to achieve clinically important intervention goals with all types of children in all situations. Whereas it is safe to conclude that no one is "proaversive," those questioning the nonaversive position believe that mandating a ban on potentially effective procedures is premature and would remove essential treatment options for some individuals (Van Houten et al., 1988). Accordingly, The Association of Behavioral Analysis and the American Psychological Association have issued statements supporting the controlled use of aversive, intrusive, and restrictive procedures under specified conditions. In opposition to the nonaversive position, a new advocacy group has been formed (the International Association for the Right to Effective Treatment) to preserve the rights of individuals to access to appropriate and effective treatment.

Until recently, there has been no attempt to evaluate these disparate positions. However, in 1989 a public forum and symposium produced a paper issued by a National Institutes of Health task force concerning the treatment of destructive behaviors of people with developmental disabilities (National Institutes of Health, 1989). This paper concluded, on the basis of analysis of available empirical evidence, that behavior reduc-

tion procedures that use aversive, intrusive, or restrictive procedures were highly effective in producing rapid, clinically significant, and durable behavioral changes. It also concluded that, though evidence was limited concerning procedures relying on environmental modification, skills training, and reinforcement of alternative behaviors for managing destructive behavior, these procedures were effective in producing highly significant reductions in destructive behavior in some individuals.

The following discussion addresses the dilemma faced by special educators and other practitioners regarding the appropriate selection and use of behavior reduction procedures in the wake of the current controversy. It appears particularly important at this time to review the empirical foundation of available behavior reduction procedures and to offer guidelines regarding the appropriate use of these with children and youth with behavior disorders. The recommendations offered here have been reviewed and approved by the Executive Committee of the Council for Children with Behavioral Disorders (CCBD). It expresses the current position of this body, although it does not necessarily represent the views of individual members of the organization.

1. Definition of Terms

Behavior reduction procedures refer to a continuum of strategies used to reduce inappropriate behaviors.

The term *behavior reduction procedures* and its variants refer to a continuum of strategies employed by practitioners to decelerate the rate or probability of behavior that is judged inappropriate in a particular situation. This term has been selected to avoid the error, subjectivity, confusion, and emotional reactions generated by terms such as *punishment* and *aversive control*.

It should be noted that *any* behavior reduction procedure is potentially aversive in that even withdrawing or withholding reinforcing events may be viewed as aversive by a person who is subjected to such action. Thus, such terms as *aversive* and *nonaversive* are often used loosely and subjectively. For purposes of this discussion, the term *aversive* will refer to stimuli that typically produce pain or discomfort to most people under most circumstances. Some examples of aversive stimuli include the use of slaps or shocks or the administration of water mist, distasteful odors, or liquids.

It is similarly difficult to categorize various strategies with regard to their relative intrusiveness, because there has been no discussion in the literature of this term. However, for purposes of discussion, the term *intrusive* is defined here as any stimulus event deployed to stop or

interrupt ongoing behavior. For example, the use of the word "no" or the removal of reinforcers or access to privileges can be considered intrusive procedures.

The term *restrictive* in this discussion refers to procedures that restrain movement or restrict a person in moving about. Some examples of restrictive procedures include physically holding a child, use of restraining devices, or seclusion in a timeout room.

The terms *inappropriate, problem, aberrant,* or *undesirable behavior* refer here generally to behavioral excesses that may be displayed by a youngster. These include disruptive, aggressive, self-injurious, antisocial, stereotypic, socially stigmatizing, or other developmentally inhibiting or abnormal behaviors.

Procedures for reducing children's problem behavior fall under four general strategies: (a) modifying environmental arrangements such as the antecedent or contextual stimuli that may evoke a particular target behavior (Evans & Meyer, 1985); (b) reinforcing alternative behavior that competes with or is incompatible with a target behavior (LaVigna & Donnellan, 1986); (c) withholding, withdrawing, or suspending access to preferred events or stimuli contingent on inappropriate behavior (Polsgrove & Rieth, 1983); and (d) administering aversive events contingent on inappropriate behavior (Azrin & Holz, 1966). These strategies, though disparate in form, share a common feature: All may be defined in terms of their potential for decelerating the probability of observable inappropriate behavior.

2. Environmental Modification

Procedures may involve changing the demands of a task, reducing the complexity of each step, or teaching a new skill that will help the child perform the task without frustration.

Modification of the environmental stimuli or antecedents and consequences that cue and maintain a particular behavior is the most obvious initial step in implementing a behavior reduction program for a youngster. This procedure requires a complete functional analysis of antecedent-behavior-consequence relationships in a particular situation (Sulzer-Azaroff & Mayer, 1977). Evans and Meyer (1985) observed that children's inappropriate behaviors may stem from increased demands, their inadequate behavioral repertoires, reinforcement of these behaviors by practitioners, or innately reinforcing mechanisms. Recent interpretations of the meaning of aberrant behavior suggest that it may in some instances serve communicative functions representing a bid to

escape an undesirable situation (Carr & Newsom, 1985). These interpretations may be cast as working hypotheses for planning behavior reductive interventions. For example, to decrease tantrum behavior that occurs as a result of a task assignment, a practitioner might decrease the demands of the task, reduce it to smaller and shorter steps, reinforce a child's appropriate response, and withhold social attention during tantrum periods. An autistic child may be provided with training in communication (e.g., asking for assistance on a difficult task) as a means of teaching appropriate behavioral responses that may replace selected problem behaviors (Carr & Durand, 1985a, 1985b).

Recent studies suggest that excessive self-stimulation may be reduced by interspersing new tasks with those previously mastered by a child through instruction in communication skills, sensory extinction, and other nonaversive, "community-referenced" procedures (Koegel & Koegel, 1989). Although more aversive and intrusive procedures (e.g., electric shock) have been found quite effective in reducing problem behavior (La Grow & Repp, 1984; Lichstein & Schreibman, 1976; Lovaas, O. I., 1987), these may produce unfortunate side effects and raise moral and ethical questions (Evans & Meyer, 1985; Koegel & Koegel, 1989; Lovaas, O. I., & Favell, 1987). On the other hand, the strategy of functionally analyzing the problem situation and altering contextual, antecedent, and maintaining variables to modify aberrant behavior has considerable merit and represents a more benign and acceptable approach than more intrusive and aversive procedures used in many behavioral interventions. Because the database related to these methods is currently in the developmental stages (National Institutes of Health, 1989), it appears premature to determine the extent to which these are appropriate for dealing with all problem behaviors under all circumstances.

3. Differential Reinforcement

Procedures involve reinforcing appropriate behavior while ignoring inappropriate behavior.

Differential reinforcement in its basic form involves two operations: reinforcement of appropriate behavior and extinction or nonreinforcement (ignoring) of inappropriate behavior. Extinction alone has been used effectively in a number of studies, but it is most often used in combination with reinforcement and other procedures (Sulzer-Azaroff & Mayer, 1977).

a. Differential Reinforcement of Incompatible (DRI) Behavior

In this frequently used application, responses that are topographically similar to an inappropriate behavior are reinforced as a way of decelerating a target behavior. For example, a parent may provide praise (social reinforcement) to his or her autistic child for working on an assigned chore but ignores the child for displaying stereotypic behavior.

b. Differential Reinforcement of Alternative (DRA, or Alt-R) Behavior

This procedure involves strengthening behaviors that may serve as alternatives, but is not necessarily compatible with, an inappropriate behavior. For example, a student who is socially aggressive may be reinforced for sharing possessions or being polite to others.

DRI and DRA procedures have been used effectively to reduce off-task behavior (Deitz, D. E. D., & Repp, 1983), highly disruptive behavior (Allyon & Roberts, 1974), and antisocial behavior (Forehand & Baumeister, 1976), as well as stereotypic behavior (Deitz, D. E. D., & Repp). These procedures also have proven to be a powerful reactive component in decelerating more serious problem behaviors such as screaming and self-injurious behavior (Mayhew & Harris, 1978) and severe hyperactivity (Twardosz & Sajwaj, 1972).

Because teaching youngsters to substitute appropriate behavior patterns for inappropriate or developmentally inhibiting ones is the primary goal of behavioral intervention, DRI and DRA have almost always been used in combination with other behavior reductive techniques in various applied behavior analysis studies. Although few long-term studies of the effects of DRI and DRA have been conducted, their capacity to maintain treatment gains over time is a major advantage. However, available evidence indicates that their effects may be unpredictable and take time; for this reason they may not be ideal for reducing aggressive, self-injurious, and destructive behaviors (Deitz, D. E. D., & Repp, 1983).

c. Differential Reinforcement of the Omission (DRO) of Behavior

DRO (Deitz, D. E. D., & Repp, 1983) entails setting time intervals, usually a few minutes long, during which a youngster must avoid displaying a specified inappropriate behavior to gain reinforcement. In using DRO to control a student's aggressive behavior, for example, a teacher might set a timer to a 5-min interval and provide valuable points at the end of the interval if the student has refrained from displaying the target behavior(s). As the teacher gradually lengthens the interval of time while reinforcing appropriate alternative behaviors, the student at once learns

to develop control over the aggressive behaviors and to substitute more appropriate behaviors.

DRO has been used in a number of studies and, because of its nonaversive properties, may be a procedure of choice in some cases over more aversive or intrusive techniques (LaVigna & Donnellan, 1986). This technique has been evaluated singly in its effectiveness in reducing such problems as stereotypic behavior (Harris, S., & Wolchik, 1979), hyperactive and aggressive behavior (Patterson, Jones, Whittier, & Wright, 1965), and self-injurious behavior (Corte, Wolf, & Locke, 1971; Luiselli, Helfen, Colozzi, Donellon, & Pemberton, 1978). DRO has also been used effectively in combination with other behavior reductive procedures: with timeout to control aggressive behavior (Bostow & Bailey, 1969), with restraint and response cost to reduce self-injurious behavior (Repp & Deitz, 1974), and with satiation and overcorrection to control destructive behavior, among other applications. Although DRO has been shown effective in reducing inappropriate behavior in many studies, it has produced only minimal results in others (e.g., Corte, Wolf, & Locke, 1971; Foxx & Azrin, 1973). As with DRI and DRA, the available literature indicates that this procedure is not always effective in reducing behavior and does not provide a rapid decline in responding. Moreover, implementing DRO places considerable demands on practitioners in terms of monitoring and counting behaviors. For this reason it may not be the treatment of choice in situations where rapid reduction of behavior is necessary, where resources are meager, or when there has been a long history of aberrant behavior (Deitz & Repp, 1983).

d. Differential Reinforcement of Low Rate (DRL) of Behavior

This procedure is similar to DRO, but the most frequently used technique, interval DRL, involves providing reinforcing consequences immediately after a specified time interval only *if* the rate of a targeted behavior during that period has equaled or been lower than a stated level. A second application, spaced-responding DRL, involves providing reinforcement if the time lapse between responses has met or exceeded a specified level (Deitz, D. E. D., & Repp, 1983).

As a behavior reduction procedure, DRL offers practitioners the unique advantage of lowering the rate of desirable behaviors which, when emitted at high rates, are offensive or disruptive to others. For example, a teacher may not want to completely eliminate the spontaneity of a child who asks for assistance on a task, but only to reduce the number of his or her requests during a particular period.

Only a few studies reporting the use of DRL have appeared in the literature. Barrish, Saunders, and Wolf (1969) reported the earliest applied study in demonstrating that DRL could effectively control disruptive behavior in a regular fourth-grade class. D. E. D. Deitz and Repp

(1983) used DRL with youngsters with mild and moderate mental retardation to decrease talk-outs during instruction. S. M. Deitz and coworkers (1978) applied DRL with youngsters with learning disabilities to reduce inappropriate and disruptive behavior to acceptable levels. Applications involving DRL to deal with children's problem behavior in applied settings have been sparse. It is apparent that this behavior reduction procedure would be inappropriate for dealing with serious problematic behaviors of children with behavior disorders such as aggression, self-injurious responses, or persistent and frequent disruptiveness or self-stimulation.

4. Response Cost

Procedures involve removing a positive reinforcer when an inappropriate behavior is displayed.

A teacher may withdraw valuable points, free time, tokens, or privileges from a student for displaying inappropriate behavior or for violating a classroom rule; a parent may deny access to television, toys, or the family automobile for misbehavior. Response cost consequences are exemplified in society through fines, penalties, and forfeitures.

Because of its ease of application and effectiveness, response cost has been widely used for decelerating various inappropriate behaviors of children of all ages with various types of disabilities (Hundert, 1976; Iwata & Bailey, 1974; Kazdin, 1972; Walker, 1983). The procedure appears to work most effectively when used with a token economy or other behavior management system in which behaviors are reinforced that compete with those intended for reduction (Walker, 1983; Walker, Hops, & Fiegenbaum, 1976).

Under some conditions, response cost may produce aggression or escape-and-avoidance behavior, especially when the reinforcement/response cost ratio fails to maintain a youngster's appropriate behavior. Behavior management programs based solely on a response cost approach have a negative focus on decreasing inappropriate behavior rather than on increasing positive behavior. Nevertheless, few undesired side effects of this approach have been reported in the literature. For example, Iwata and Bailey's (1974) study of the effects of reward and contingency-cost procedures on the social and academic behavior of students with disabilities did not confirm anticipated negative side effects, nor did Kaufman and O'Leary's (1972) study comparing reward and cost-contingency programs with adolescents with serious emotional disturbance. Bandura (1969) observed that response cost programs are less likely to result in imitative aggression than other forms of punish-

ment. Further, detrimental side effects have not been found in major reviews of the topic (Kazdin, 1972; Walker, 1983). Available information suggests that response cost is an effective and relatively benign technique for decreasing youngsters' inappropriate behaviors in many situations. However, the procedure may be perceived by some individuals as aversive and may lead to an escalation of resistive, escape, and avoidance behaviors.

5. Timeout

This procedure removes the child for a short period of time from all reinforcement opportunities.

The term *timeout* refers to a behavior reduction procedure in which youngsters are suspended for a short period of time from access to all opportunities for reinforcement, contingent on their displaying inappropriate behavior (Hall & Hall, 1980; Noll & Simpson, 1979; Zabel, 1986). Examples of this widely applied routine include withdrawing a youngster temporarily from playground activities for rough play, requesting that a disruptive student sit quietly in a designated chair for a period of time, placing a continuously misbehaving pupil in a secluded booth or area, or removing a youngster to an isolation area or room to control his or her tantrums or aggressive behavior.

Depending on how it is implemented, timeout is a complex process involving several behavior reduction procedures. Timeout that is administered contingent on a child's problem behavior functions immediately as a response cost procedure in that access to reinforcing stimuli is withdrawn and as extinction by removing the child from social attention for inappropriate behavior. Timeout also functions as negative reinforcement if a child is required to display appropriate behavior for a set amount of time contingent on his or her being allowed to return to classroom activities (Nelson, M., & Rutherford, 1983; Polsgrove, 1982). In terms of the appropriate administration of timeout, several "levels" have been identified in the literature, including (a) a contingent observation timeout in which a child observes other children behaving appropriately, (b) exclusion timeout situation where a child cannot observe other children or be observed by them, and (c) a safe and secured room (seclusion timeout) where a child is removed from access to the normal environment (Gast & Nelson, 1977; Nelson, M., & Rutherford, 1983; Solnick, Rincover, & Peterson, 1977).

Although not a universally effective procedure with every child, the utility of this strategy has been well documented (Barton, Bruelle, & Repp, 1987; Barton & Doherty, 1983; Harris, K., 1985; Nordquist &

Wahler, 1973; Pendergrass, 1972). Timeout appears to be a relatively harmless procedure, although efficacy depends on such factors as the way in which it is used, the type of behavior that is timed out, the history of the child, the availability of a reinforcing environment, and the duration of the timeout period. Effective use of timeout entails several components, including verbalizing the reason for timeout, providing a warning, providing appropriate instructions, locating the timeout area in an appropriate place, limiting the duration of timeout, scheduling timeout appropriately, requiring appropriate behavior before release, and removing potential sources of reinforcement in the timeout area (Harris, K., 1985).

Depending on how timeout is implemented, potential negative side-effects of this procedure include noncompliance, aggression, avoidance, and emotional responses. To date, however, no negative side effects have been associated consistently with its use (Newsom, Favell, & Rincover, 1983). Pendergrass (1972) and Carr, Newsom, and Binkoff (1980) reported possible increased aggression as a function of timeout. Such negative responses appear to be most common when it functions as a means of allowing children to escape from tasks and adult commands and when it provides an opportunity to engage in self-stimulatory behavior.

Some studies also have associated positive side effects with timeout. Allison and Allison (1971) observed decreased oppositional behavior and increased spontaneous affection as a result of timeout for aggressive behavior. Other studies have reported increases in attention and social appropriateness in conjunction with timeout use (Bostow & Bailey, 1969; Wahler & Nordquist, 1973). As with any behavioral intervention, its effectiveness depends on the appropriate application of the procedure. M. Nelson and Rutherford (1983) offer a number of recommendations for the appropriate use of timeout, including a hierarchy consisting of planned ignoring, DRI, contingent observation, exclusion, and seclusion timeout. Among other recommendations, they advocate evaluating the capacity of the educational setting to implement various levels of timeout, explaining the purpose of timeout to the child, providing compliance training, gaining approval from parents, reviewing procedures with a human rights committee, preparing written timeout procedures, providing appropriate sites for timeout, taking data on timeout use, and regularly evaluating the results of a timeout program.

6. Overcorrection

These strategies require the "disrupter" to restore the environment to an orderly and improved state and to practice an appropriate behavior for the situation.

Overcorrection is a relatively recent behavioral procedure that, according to Foxx and Azrin (1973), has two objectives: (a) to restore the environment disrupted by a maladaptive response, and (b) to require the disrupting individual to practice a related appropriate response.

The procedure for achieving the first objective, restitutional overcorrection, requires "the disrupter to correct the consequences of his misbehavior by having him restore the situation to a state vastly improved from that which existed before the disruption" (Foxx & Azrin, 1972, p. 2). A child who smears his feces, for example, might be made to wash, clean, and wax the soiled area. Positive practice overcorrection, used to attain the second objective, requires the child to practice a sequence of appropriate competing behaviors for emitting an inappropriate behavior; one who smears his or her feces, for example, would be required to practice acceptable toileting behaviors.

Both restitution and positive practice overcorrection have been reported to effectively and efficiently decrease undesirable responses of children and adolescents with behavioral disorders and emotional disturbance (Doke & Epstein, 1975; Sasso, Simpson, & Novak, 1985; Simpson & Sasso, 1978). Unlike several other behavior reduction options, overcorrection also may effectively decelerate self-stimulatory behaviors (Foxx & Azrin, 1972; Harris, S., & Wolchik, 1979). Further, the procedure is "less likely than other forms of punishment to produce excessive negative generalization, withdrawal, aggression, and negative self-comments. It is not a painful procedure nor does it provide an aggressive model" (Sulzer-Azaroff & Mayer, 1977, p. 297).

Overcorrection is not without its disadvantages, however. It initially requires one-to-one, teacher-pupil training and considerable teacher time. Also, manual prompts are required when students fail to follow verbal commands, thereby increasing the likelihood of aggressive and avoidance behaviors. For example, Matson and Stephens (1977) reported that one subject attempted to kick and hit when manually guided through an overcorrection exercise.

Overcorrection studies have produced both negative and positive side effects. Thus, tantrum (Matson, 1975), aggressive (Foxx & Azrin, 1972), and avoidance responses (Wells, Forehand & Hickey, 1977) have been noted infrequently. Positive side effects observed include increases in appropriate play (Harris, S., & Wolchick, 1979) and attention (Foxx &

Azrin, 1973) and other generalized effects (Simpson & Swenson, 1980). While seemingly offering many advantages over other behavior reduction strategies, the long-term effects of overcorrection with children and adolescents with disabilities remain unknown. Problems of resistance and aggression aside, overcorrection appears an effective and appropriate option for reducing behavior when used appropriately.

A procedure associated with overcorrection in some studies is contingent exercise. In this procedure, a youngster may be required to engage in various exercises (e.g., pushups, running in place) contingent upon emitting an inappropriate target response. This procedure is similar to positive-practice overcorrection, except that the exercise is unrelated to the target behavior. Although contingent exercise has received limited research attention, studies suggest it effectively reduces inappropriate behavior in some situations. Dickie and Finegan (1980) observed significant reductions in self-stimulatory behaviors in three autistic children by having them run in place for 1 min for engaging in self-stimulatory behavior. Luce and Hall (1981) also reported positive results from using contingent exercise, but further studies are required before this approach can be considered appropriate for routine use with children and youth with behavior disorders.

7. Aversive Conditioning

Painful, distasteful, or undesirable stimuli are used to reduce undesirable behavior.

Aversive conditioning involves the contingent use of painful, distasteful, or undesirable stimuli to decelerate specific inappropriate behavior. It is generally accepted that aversive procedures are reserved for dangerous and potentially injurious response patterns, after other, more positive, benign, and less intrusive procedures have been implemented without producing clinically significant results (Lovaas & Favell, 1987). Aversive conditioning involves such procedures as applying mild electric shock, squirting lemon juice or tabasco in the mouth, spanking, or slapping and use of other contingently applied noxious stimuli (Singh, Watson, & Winston, 1986).

Aversive conditioning is by far the most controversial of the behavior reductive options and is at the core of much of the debate concerning the use of these. Historically, these procedures have constituted a treatment component accorded youngsters with autism and developmental disabilities; and, to a lesser extent, children with behavior disorders and emotional disturbance. Children and adolescents without disabilities also are commonly exposed to aversive procedures, par-

ticularly paddling and spanking, but aversive conditioning is a *planned* and *systematically* applied intervention compared with corporal punishment, which is used as a general measure to discipline youngsters.

One particularly controversial aversive conditioning technique that has been used primarily in clinical situations is contingent electric shock. In this procedure, brief periods of mild electric shock, administered locally with a shock stick device, foot grid, or electrodes attached to the skin, are made contingent on specified problem behaviors. The technique is typically not used in isolation, but is invoked as a means of stopping ongoing inappropriate behavior long enough for the child to be reinforced for displaying appropriate alternative behaviors. For example, Lovaas and co-workers (Lovaas, Schaffer, & Simmons, 1965) taught autistic children to approach adults and show affection by applying a mild shock to their feet and socially reinforcing them for appropriate approach behavior.

Both negative and positive side effects of contingent electric shock have been reported. Fear, pain, avoidance, generalized aggressive responses, and interference with children's motor behavior and facial expressions have been observed in some studies (Baroff & Tate, 1968; Lichstein & Schreibman, 1976). Generalized avoidance reactions to persons and situations associated with shock (Azrin & Holz, 1966), as well as adaptation to increasingly higher levels of shock to control the problem behaviors, may also result (Lovaas, O. I., 1987; Peterson & Zabel, 1985).

Lichstein and Schreibman (1976) summarized the positive and negative side effects of 10 studies in which contingent electric shock was used with autistic children. Positive side effects included increased sociability, cooperation, imitation, eye contact, alertness, affection, happiness, smiling, calmness, and playfulness. Other effects included decreased whining, crying, social withdrawal, and other pathological behaviors. Negative side effects that were associated with the use of shock in this review included increased fear, sullenness, aggression, crying, dependency, and aversion.

Some reviews of the literature have revealed more positive direct and secondary effects than negative side effects of programs involving electric shock, in terms of clinically significant improvements in social and emotional behavior (Lichstein & Schreibman, 1976; Matson & Taras, 1988). Others have indicated more negative side effects (Guess et al., 1987). Positive results, however, should not be interpreted to indicate that contingent shock should be included as a component of an intervention program simply because it is an effective behavior change procedure. As discussed later, selecting a suitable behavior reduction strategy involves a number of considerations, only one of which involves the effectiveness of the procedure.

Other aversive stimuli also have been employed in studies to reduce inappropriate behavior of children and adolescents with behavior disorders. Orally administered citrus juice, tabasco sauce, and similar noxious stimuli have been used for reducing inappropriate behavior. Other procedures include the use of water mist (applied to the face), visual screening, white noise, and restraint. As with electric shock, these methods also have been used primarily in cases of intractable, extreme, and dangerous responses as components of aversive conditioning programs, in combination with other methods. These procedures have yielded results similar to those reported for contingent electric shock (Matson & Taras, 1988).

Opponents of the use of aversive conditioning procedures claim that these do not produce lasting direct outcomes or positive side effects and result in negative emotional responses. Available literature, however, indicates that treatment "packages" containing aversive components produce more positive than negative effects (Lichstein & Schreibman, 1976). Matson and Taras (1988), for example, in their review of 382 behavioral research studies involving aversive components conducted over the previous 20 years, concluded that aversive procedures not only were more effective in reducing inappropriate behavior, but also produced stable positive results over time. For example, Lovaas (1987) reported long-term (15 years) follow-up data on 19 autistic children who had received a program that included aversive conditioning. This study indicated that 47% of the children achieved normal intellectual and educational functioning, 40% were able to function in classes for students with mild mental retardation, and only 10% reportedly remained classified as having serious disabilities.

Although this study is the only long-term follow-up study of its kind, it nonetheless provides significant evidence that programs using aversive control components, when used appropriately, may contribute to highly reliable and long-term therapeutic outcomes, despite contrary claims by those opposing the use of these techniques.

A decision to use aversive control procedures must weigh the urgency of changing the target behavior, immediate and future needs of the individual youngster, effectiveness of previous interventions, available resources, and the competence and the moral orientation of the practitioners involved in administering the procedures. Ethical considerations notwithstanding, the available literature indicates that aversive components may be necessary in some cases until more powerful nonaversive and intrusive alternatives are developed (Axelrod, 1987).

Though it may be argued that such procedures are necessary for modifying the self-injurious and dangerously aggressive behavior of children for whom less extreme methods have not been successful, there is great potential for misuse and abuse in using these interventions. In addition, the moral and ethical issues involved in shocking, slapping, or

otherwise hurting children transcend purely academic considerations (Guess et al., 1987).

8. Corporal Punishment

Corporal punishment refers to hitting or otherwise inflicting pain on an individual.

Corporal punishment is another behavior reduction procedure used commonly in the public schools and less frequently in clinical studies. According to Weilkiewicz (1986), "*Corporal punishment* refers to hitting with a hand or fist, hitting with an object such as a belt, paddle, cane, whip, or anything else" (p. 35). Wood (1978) defined corporal punishment as "any procedure for inflicting pain upon the body of one person (the punished) by another person (the punisher)" (p. 29).

Corporal punishment is commonly used in the public schools as a means of disciplining a youngster for breaking rules or other misbehavior, often by personnel with little or no training in child or clinical psychology or behavior analysis. It has also been used in clinical interventions as a component in the treatment of people with severe disabilities and developmental disabilities. For example, Lovaas (1987) used a slap to the thigh to stop ongoing inappropriate behavior long enough to reinforce other more appropriate behavior(s) as part of a treatment package to rehabilitate autistic children.

Available research reveals widespread use of traditional applications of corporal punishment, including those with behavioral disorders, but it is more often used with students without disabilities than with students with disabilities (Rose, 1984). Hyman, McDowell, and Raines (1977) reported that 70%–80% of teachers favored the use of corporal punishment, although most were also interested in alternative procedures. Opinion surveys have also consistently revealed that the public is generally supportive of moderate use of corporal punishment with children (McDaniel, 1980; Musemeche & Sauls, 1976).

Forness and Sinclair (1984) observed that corporal punishment is permissible in most states, albeit typically in the absence of precise definitions of the term. Use of corporal methods in school settings has been legitimized by the common-law doctrine of "in loco parentis." This doctrine formed the basis of a 1977 U.S. Supreme Court decision (*Ingraham v. Wright*, 1977), which held that corporal punishment did not constitute cruel and unusual punishment and thus did not require due process safeguards of the Eighth Amendment. The majority in the case concluded: "The openness of the public school and its supervision by the community afford significant safeguards (through applications of the

civil and criminal law) against the kind of abuse from which the Eighth Amendment protects the prisoner" (p. 670).

Despite its long-term and widespread use, little empirical support is available for applying corporal punishment in isolation for children either with or without disabilities; in fact, other behavior reduction procedures are probably more effective both in short-term and long-term applications. Some potential problems associated with its use include legal issues (Clarke, Liberman-Lascoe, & Human, 1982), negative side effects (Townsend, 1984), and ethical questions (Bettelheim, 1985). Because of minimal information concerning its effects and intention, the use of corporal punishment with youngsters with behavior disorders, as traditionally employed in public school programs, cannot be justified.

9. Research Findings

Current research does not provide a clear direction on when or where to use specific behavior reduction procedures.

After reviewing data on both sides of the issue, we have concluded that the question of whether totally nonaversive, intrusive, or restrictive approaches are superior to strategies incorporating aversive, intrusive, or restrictive procedures for reducing problem behaviors of children with behavior disorders cannot be answered by the current literature. There simply have been too few studies comparing these procedures to provide definitive and conclusive answers. Studies on both sides of the issue contain methodological flaws. In particular, though a number of studies using aversive, intrusive, or restrictive procedures have shown powerful effects, these also involved the use of reinforcement as a reactive variable. Although studies relying exclusively on less aversive approaches, such as DRO, DRA, stimulus control, and environmental modification, show promise, not enough information is available to conclude that more aversive, intrusive, or restrictive measures are unnecessary in all cases and situations. Moreover, given the considerable ethical issues involved, it seems unlikely that comparison studies in the future will address this issue.

Practitioners seeking guidance regarding appropriate practices from the literature or workshops and conferences are therefore likely to be confused about which treatment procedures to follow in various situations. The decision to completely avoid the use of aversive, intrusive, and restrictive behavior reduction procedures is ostensibly more morally and ethically appealing; however, situations will undoubtedly arise in which relatively less aversive, intrusive, and restrictive procedures simp-

ly are not effective in reducing behavior. In these cases, practitioners face a moral dilemma of whether to use an ineffective, but personally acceptable procedure, or to use a personally repugnant but aversive procedure to manage severe, intractable, and undesirable behavior. A considerable number of variables color such decision-making, including safety, freedom, welfare, and the long-term advantages to the child. Although there are no clear answers to the complex technical, moral, and ethical considerations posed by a decision to employ behavior reduction strategies, as an aid to practitioners facing these decisions, the following recommendations are offered.

10. Recommendations

Recommendations for using behavior reduction procedures advise obtaining prior consent, trying less aversive strategies first, following appropriate protocol, writing a detailed plan, using trained personnel, and keeping track of effectiveness.

1. *Practitioners planning to use these behavior reduction procedures, especially those involving more aversive, intrusive, or restrictive techniques, should obtain prior consent from the child's parents or legal guardians and from administrators, and clearance from human rights committees.* These are particularly important considerations because few state and federal guidelines related to behavior reduction procedures exist. Although informed consent protocols vary across settings, they should include (a) a description of the intervention procedure and a rationale for its use; (b) a list of anticipated treatment outcomes; (c) a list of potential positive and negative side effects; and (d) a description of procedures establishing program efficacy, including a list of program developers, outcome data, and review dates.
2. *Practitioners should carefully analyze potential target behavior(s) and the factors associated with their occurrence before initiating behavior reduction procedures.* Accordingly, the following variables should be taken into account: the target behavior definition, the situations and environmental settings in which the problem behavior occurs, the controlling contingencies, specific environmental stimuli and events associated with the problem behavior, the intervention history, and the possible communicative functions or intent of the problem behavior (Carr & Durand, 1985b; Evans & Meyer, 1985).

3. *As a general rule, practitioners should implement and document the use of appropriate less aversive, intrusive, or restrictive procedures before implementing other procedures.* However, there may be instances that call for the immediate implementation of more aversive, intrusive, or restrictive behavior reduction procedures, especially where behavior is dangerous or destructive. Further, these strategies should always be used in concert with methods that strengthen and teach competing or alternative behaviors to those targeted for reduction. Developmental approaches that emphasize a progression of least-to-more aversive, intrusive, and restrictive procedures have been suggested as a means of determining whether positive procedures have been exhausted and which type of behavior reduction procedures might be appropriate (Evans & Meyer, 1985; Forness, 1978; Forness & Sinclair, 1984; Gaylord-Ross, 1984).

   Gaylord-Ross (1984) offered a decision model for treatment of aberrant behavior consisting of five components: assessment, reinforcement procedures, ecological procedures, curriculum procedures, and behavior reduction procedures. Practitioners can use this decision model to select appropriate behavior reduction interventions in particular cases. The assessment component consists of collecting and evaluating baseline data to determine the existence or severity of the problem. If a problem is confirmed, practitioners proceed to the reinforcement component, which involves an analysis and alteration of reinforcing contingencies and the removal of negative reinforcing (i.e., escape or avoidance) contingencies. The ecological component includes an analysis of and alteration of the environmental stimuli that may be contributing to the child's aberrant behavior. The curriculum component involves reducing task demands or changing tasks and building skills as an intervention. Finally, if the first four components fail to produce desirable effects, a more aversive, intrusive, or restrictive behavior reduction procedure might be considered, beginning with response cost and timeout, then contingent restraint and overcorrection.

4. *Practitioners should follow appropriate protocol in using behavior reduction strategies.* First, legal guidelines and school or institutional standards and policies must be followed. Second, appropriate permission from human rights committees, administrators, and parents or legal custodians must be secured (Martin, 1979; Singer & Irvin, 1987). Third, behavior reduction programs must include steps to ensure that youngsters are protected from violations of their due process. Fourth, detailed descriptions of proposed behavior reduction procedures should be issued, including explanations of (a) the specific procedures to be used; (b) the qualifications of the program designers; (c) the justification for the program, including documen-

tation that previous interventions have been unsuccessful; (d) the length of time the procedure will continue before formal program evaluation; (e) the potential positive and negative outcomes of the program, including side effects; and (f) the method used for collecting data to document program effectiveness. Fifth, regular contacts should be made with parents, administrators, and other professionals to keep them apprised of the child's progress (Singer & Irvin). This should include, whenever possible, a demonstration of the behavior reduction procedures to be used so that parents and others are *fully* informed before consenting to implementing these. Finally, an agency's policy on use of behavior reductive procedures should be reviewed periodically by a panel of professional peers who are not employed by the institution. These individuals should be knowledgeable concerning the issues involved in the appropriate selection and implementation of these strategies.

5. *Practitioners should develop and subsequently follow a plan detailing the behavior reduction procedure(s) to be used in a particular case.* Such a plan should be written as part of a child's individualized educational plan. Periodic modifications of this plan, based on assessment information, should be entered in writing in the original document. This procedure facilitates consistency and documents successes and failures of various approaches.

6. *Once aversive behavior reduction procedures are selected and approved, practitioners should select appropriate procedures for specific situations.* The selection of appropriate procedures should be based on model studies in the existing empirical literature and not generated ad hoc. Further, behavior reduction strategies selected should never be more aversive, intrusive, or restrictive than is absolutely necessary in a particular case; these strategies should always be used in combination with positive reinforcement programs that shape appropriate competing and alternative behavior. When the use of these behavior reduction options appears warranted, practitioners should rely on response cost, timeout, and overcorrection procedures to the exclusion of aversive procedures. The use of corporal punishment or painful or noxious stimuli for reducing behavior is highly questionable and is therefore not recommended to practitioners working in public institutions.

However, it is important to avoid behavior reduction procedures that are ineffective and that may result in the child's adaptation to these procedures. That is, if the use of behavior reduction procedures is indicated, methods sufficient for producing planned behavior change should be adopted. These methods should be implemented and modified only after careful evaluation and team review. Highly intrusive or aversive reductive procedures

should *never* be used by an individual acting on his or her sole professional judgment.

7. *Persons responsible for carrying out behavior reduction procedures must be appropriately trained.* Appropriate training should include (a) formal training in various strategies, (b) the precise manner in which the procedure(s) should be applied, (c) supervised practice in implementing the procedure(s), and (d) an understanding of data collection methods for evaluating the adopted procedure (Braaten, Simpson, Rosell, & Reilly, 1987).

8. *Practitioners should keep data on the efficacy of the behavior reduction procedures and should communicate these in regularly scheduled staff/parent meetings.* The availability of data for decision making is crucial to ensure the proper implementation of a program and to evaluate its effectiveness. Data collection should be a part of all behavior reduction programs. Information pertaining to a child's progress on specific programs must be communicated at regular intervals to professionals involved and to parents.

The complexity of the issues surrounding the application of behavior reduction procedures with children and youth with behavior disorders makes it difficult to draw comprehensive and precise conclusions regarding when, where, and how these techniques should be administered. Ultimately, the decision regarding which of these procedures are appropriate in a particular situation must be decided on a case-by-case basis by qualified professionals. Wherever possible, these decisions should be based on the abundant empirical literature related to behavior reduction techniques.

Although progress has been made toward developing less aversive, intrusive, and restrictive alternatives for reducing behavioral excesses of behaviorally disordered youngsters than those currently in use, this technology has not yet developed to the point that the alternatives are clearly effective in all situations with all types of children and with all types of problem behaviors. However, CCBD advocates the continued development of more positive behavior reduction alternatives; wherever feasible, these should be selected to facilitate intervention goals and the educational and social development of children with behavioral disorders. Moreover, all procedures should be implemented only in situations where personnel are qualified, and only with adherence to recommended procedural guidelines.

CCBD endorses the right of qualified educators and other professionals to employ appropriate behavior reduction procedures when such methods are undertaken with suitable planning and adherence to the guidelines offered here. The organization does not sanction the use of corporal punishment or highly aversive or nonempirically validated

procedures for managing problem behaviors of children and youth with behavior disorders.

References

Allison, T., & Allison, S. (1971). Time-out from reinforcement: Effects on sibling aggression. *Psychological Record, 21,* 81–86.

Allyon, T., & Roberts, M. D. (1974). Eliminating discipline problems by strengthening academic performance. *Journal of Applied Behavior Analysis, 7,* 71–76.

Axelrod, S. (1987). Doing it without arrows: A review of LaVigna and Donnellan's *Alternatives to punishment: Solving behavior problems with non-aversive strategies. The Behavior Analyst, 10,* 243–251.

Azrin, N., & Holz, W. (1966). Punishment. In W. K. Honig (Ed.), *Operant behavior: Areas of research and application* (pp. 380–447). New York: Appleton-Century-Crofts.

Bandura, A. (1969). *Principles of behavior modification.* New York: Holt, Rinehart & Winston.

Bandura, A. (1973). *Aggression: A social learning analysis.* Englewood Cliffs, NJ: Prentice-Hall.

Baroff, G., & Tate, B. (1968). The use of aversion stimulation in the treatment of chronic self-injurious behavior. *Journal of the American Academy of Child Psychiatry, 7,* 454–460.

Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2,* 119–124.

Barton, L., Bruelle, A., & Repp, A. (1987). Effects of differential scheduling of time out to reduce maladaptive responding. *Exceptional Children, 53,* 351–356.

Bettelheim, B. (1985, November). Punishment versus discipline. *The Atlantic Monthly,* 51–59.

Bostow, D., & Bailey, J. (1969). Modification of severe disruptive and aggressive behavior using brief timeout and reinforcement procedures. *Journal of Applied Behavior Analysis, 2,* 31–38.

Braaten, S., Simpson, R., Rosell, J., & Reilly, T. (1987). Use of punishment with exceptional children and youth: A dilemma for educators. *Teaching Exceptional Children, 20,* 79–81.

Bratner, J. P., & Doherty, M. A. (1983). A review of timeout: A conceptual and methodological analysis. In S. Axelrod & J. Apsche (Eds.), *The effects of punishment on human behavior* (pp. 87–132). New York: Academic Press.

Carr, E. G., & Durand, V. M. (1985a). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18,* 111–126.

Carr, E. G., & Durand, V. M. (1985b). The social-communicative basis of severe behavior problems. In S. Reiss & R. Bootzin (Eds.), *Theoretical issues in behavior therapy* (pp. 219–254). New York: Academic Press.

Carr, E. G., & Newsom, C. (1985). Demand-related tantrums. *Behavior Modification, 9,* 403–426.

Carr, E., Newsom, C., & Binkoff, J. (1980). Escape as a factor in the aggressive behavior of two retarded children. *Journal of Applied Behavior Analysis, 13,* 113–129.

Clarke, J., Liberman-Lascoe, R., & Human, I. (1982). Corporal punishment in school as reported in nationwide newspapers. *Child and Youth Services, 4,* 47–55.

Corte, H., Wolf, M., & Locke, G. (1971). A comparison of procedures for eliminating self-injurious behavior of retarded adolescents. *Journal of Applied Behavior Analysis, 4,* 201–213.

Cullinan, D., Epstein, M., & Kauffman, J. M. (1982). The behavioral model and children's behavior disorders: Foundations and evaluations. In R. McDowell, G. Adamson, & F. Wood (Eds.), *Teaching emotionally disturbed children,* (pp. 15–46). Boston: Little, Brown.

Deitz, D. E. D., & Repp, A. C. (1983). Reducing behavior through reinforcement. *Exceptional Education Quarterly, 3,* 34–46.

Deitz, S. M., Slack, D. J., Schwartzmueller, E. B., Wilander, A. P., Weatherly, T. J., & Hillard, G. (1978). Reducing inappropriate behavior in special classrooms by reinforcing average interresponse times: Interval DRL. *Behavior Therapy, 9,* 37–46.

Dickie, R., & Finegan, S. (1980). The use of a common overcorrection procedure in eliminating topographically and functionally dissimilar "autistic" behaviors in several children. *Education and Treatment of Children, 3,* 21–31.

Doke, L., & Epstein, L. (1975). Oral overcorrection: Side effects and extended applications. *Journal of Experimental Child Psychology, 20,* 496–511.

Evans, I. M., & Meyer, L. H. (1985). *An educative approach to behavior problems.* Baltimore: Paul H. Brookes.

Forehand, R., & Baumeister, A. A. (1976). Deceleration of aberrant behavior among retarded individuals. *Progress in Behavior Modification, 1976, 2,* 223–278.

Forness, S. R. (1978). Developmental programming for the use of aversive procedures in a hospital school. In F. H. Wood & K. C. Lakin (Eds.), *Punishment and aversive stimulation in special education: Legal, theoretical and practical issues in their use with emotionally disturbed children and youth* (pp. 85–100). Minneapolis: University of Minnesota, Department of Psychoeducational Studies.

Forness, S. R., & Sinclair, E. (1984). Avoiding corporal punishment in school: Issues for school counselors. *Elementary School Guidance and Counseling, 18,* 268–276.

Foxx, R. M., & Azrin, N. H. (1972). Restitution: A method of eliminating aggressive-disruptive behaviors of retarded and brain damaged patients. *Behavior Research and Therapy, 10,* 15–27.

Foxx, R. M., & Azrin, N. H. (1973). The elimination of autistic self-stimulatory behavior by overcorrection. *Journal of Applied Behavior Analysis, 6,* 1–14.

Gast, D., & Nelson, C. M. (1977). Legal and ethical considerations for the use of timeout in special education settings. *Journal of Special Education, 11,* 457–467.

Gaylord-Ross, R. (1984). A decision model for the treatment of aberrant behavior in applied settings. In W. Sailor, B. Wilcox, & L. Brown (Eds.), *Methods of instruction for severely handicapped students* (pp. 135–158). Baltimore: Paul H. Brookes.

Guess, D., Helmstetter, E., Turnbull, H. R., & Knowlton, S. (1987). *Use of aversive procedures with persons who are disabled: A historical review and critical analysis.* Seattle, WA: The Association for Persons with Severe Handicaps.

Hall, R., & Hall, M. (1980). *How to use time out.* Lawrence, KS: H & H Enterprises.

Harris, K. (1985). Definitional, parametric, and procedural considerations in timeout interventions and research. *Exceptional Children, 51,* 279–288.

Harris, S., & Wolchik, S. (1979). Suppression of self-stimulation: Three alternative strategies. *Journal of Applied Behavior Analysis, 12,* 185–198.

Hundert, J. (1976). The effectiveness of reinforcement, response, cost, and mixed programs on classroom behavior. *Journal of Applied Behavior Analysis, 9*, 107.

Hyman, I., McDowell, E., & Raines, B. (1977). Corporal punishment, an alternative in the schools. An overview of theoretical and practical issues. In J. H. Wise (Ed.), *Proceedings: Conference on corporal punishment in the schools* (pp. 5–16). Washington, D.C.: National Institute of Education.

Ingraham v. Wright. 430 U.S. 651 (1977).

Iwata, B., & Bailey, J. (1974). Reward versus cost token systems: An analysis of the effects on students and teachers. *Journal of Applied Behavior Analysis, 7*, 567–576.

Kaufman, K., & O'Leary, K. D. (1972). Reward, cost, and self-evaluation procedures for disruptive adolescents in a psychiatric hospital school. *Journal of Applied Behavior Analysis, 5*, 293–309.

Kazdin, A. (1972). Response cost: The removal of conditioned reinforcers for therapeutic change. *Behavior Therapy, 3*, 535–546.

Kerr, M. M. & Nelson, C. M. (1989). *Strategies for managing behavior problems in the classroom* (2nd ed.). Columbus, OH: Merrill.

Koegel, R., Rincover, A., & Russo, D. (1982). Classroom management: Progression from special to normal classrooms. In R. Koegel, A. Rincover, & A. Egel (Eds.), *Educating and understanding autistic children* (pp. 203–241). San Diego: College-Hill Press.

Koegel, R. L., & Koegel, L. K. (1989). Community-referenced research on self-stimulation. In E. Cipani (Ed.), *The treatment of severe behavior disorders. Behavior analysis approaches* (pp. 129–150) (Monograph No. 12). American Association of Mental Deficiency.

La Grow, S. J., & Repp, A. C. (1984). Stereotypic responding: A review of intervention research. *American Journal of Mental Deficiency, 88*, 595–609.

LaVigna, G. W., & Donnellan, A. M. (1986). *Alternatives to punishment: Solving behavior problems with non-aversive strategies.* New York: Irvington Publishers.

Lichstein, K. L., & Schreibman, L. (1976). Employing electric shock with autistic children: A review of the side effects. *Journal of Autism and Childhood Schizophrenia, 6*, 163–173.

Lovaas, I., Schaeffer, B., & Simmons, J. (1965). Building social behavior in autistic children by use of electric shock. *Journal of Experimental Research in Personality, 1*, 99–109.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*, 3–9.

Lovaas, O. I., & Favell, J. E. (1987). Protection for clients undergoing aversive/restrictive interventions. *Education and Treatment of Children, 10*, 311–325.

Luce, S., & Hall, V. (1981). Contingent exercise: A procedure used with differential reinforcement to reduce bizarre verbal behavior. *Education and Treatment of Children, 4*, 309–327.

Luiselli, J. K., Helfen, C. S., Colozzi, G., Donellon, S., & Pemberton, B. (1978). Controlling self-inflicted biting of a retarded child by the differential reinforcement of other behavior. *Psychological Reports, 42*, 435–438.

Martin, R. (1979). *Legal challenges in regulating behavior change*. Champaign, IL: Research Press.

Matson, J. L. (1975). Some practical considerations for using the Foxx and Azrin method of toilet training. *Psychological Reports, 27*, 350.

Matson, J. L., & Stephens, R. (1977). Overcorrection of aggressive behavior in a chronic psychiatric patient. *Behavior Modification, 1*, 559–564.

Matson, J. L., & Taras, M. E. (1988). A 20-year review of punishment and alternative methods to treat problem behaviors in developmentally delayed persons. *Research in Developmental Disabilities, 10*, 85–104.

Mayhew, G. I., & Harris, F. (1978). Some negative side effects of a punishment procedure for stereotyped behavior. *Journal of Behavior Therapy and Experimental Psychiatry, 9*, 245–251.

McDaniel, T. R. (1980). Exploring alternatives to punishment: The keys to effective discipline. *Phi Delta Kappan, 61*, 455–458.

McGee, J. J., Menolascino, F. J., Hobbs, D. C., Menousek, P. E. (1987). *Gentle teaching*, New York: Human Sciences Press.

Mulick, J. A., & Linscheid, T. R. (1988). A review of LaVigna and Donnellan's *Alternatives to punishment: Solving behavior problems with non-aversive strategies. Research in Developmental Disabilities, 9*, 317–320.

Musemeche, R. A., & Sauls, C. (1976). Policies and attitudes on corporal punishment. *Phi Delta Kappan, 58*, 283.

National Institutes of Health. (1989). *Consensus Development Conference Statement: Treatment of Destructive Behaviors in Persons with Developmental Disabilities*. Washington, D.C.: Department of Health and Human Services.

Nelson, C. M., & Polsgrove, L. (1984). Behavior analysis in special education: White rabbit or white elephant? *Remedial and Special Education, 5*, 6–17.

Nelson, M., & Rutherford, R. (1983). Timeout revisited: Guidelines for its use in special education. *Exceptional Education Quarterly, 3*, 56–67.

Newsom, C., Favell, J., & Rincover, A. (1983). The side effects of punishment. In S. Axelrod & Apsche (Eds.), *The effects of punishment on human behavior* (pp. 285–316). New York: Academic Press.

Noll, M., & Simpson, R. (1979). The effects of physical timeout on the aggressive behavior of a severely emotionally disturbed child in a public school setting. *AAESPH Review, 4*, 399–406.

Nordquist, V., & Wahler, R. (1973). Naturalistic treatment of an autistic child. *Journal of Applied Behavior Analysis, 6*, 79–87.

Patterson, G. R., Jones, R., Whittier, J., & Wright, M. A. (1965). A behavior modification technique for the hyperactive child. *Behavior Research and Therapy, 2*, 2217–2236.

Pendergrass, V. (1972). Timeout from positive reinforcement following persistent high-rate behavior in retardates. *Journal of Applied Behavior Analysis, 5*, 85–91.

Peterson, R., & Zabel, R. (1985). Aversives in special education programs for behaviorally disordered students: A debate. *Behavioral Disorders, 10*, 295–304.

Polsgrove, L. (1982). Return to baseline: Some comments on Smith's reinterpretation of seclusionary timeout. *Behavioral Disorders, 8*, 50–52.

Polsgrove, L., & Rieth, H. J. (1983). Procedures for reducing children's inappropriate behavior in special education settings. *Exceptional Education Quarterly, 4*, 20–33.

Repp, A. C., & Deitz, S. M. (1974). Reducing aggressive and self-injurious behavior of institutionalized retarded children through reinforcement of other behaviors. *Journal of Applied Behavior Analysis, 7*, 313–326.

Rose, J. (1984). Current use of corporal punishment in American public schools. *Journal of Educational Psychology, 76*, 427–441.

Sasso, G., Simpson, R., & Novak, C. (1985). Procedures for facilitating integration of autistic children in public school settings. *Analysis and Intervention in Developmental Disabilities, 5*, 233–246.

Simpson, R., & Regan, M. (1986). *Managing autistic behaviors.* Rockville, MD: Aspen Press.

Simpson, R., & Sasso, G. (1978). The modification of rumination in a severely emotionally disturbed child through an overcorrection procedure. *AAESPH Review, 3*, 195–205.

Simpson, R., & Swenson, C. (1980). The effects and side effects of an overcorrection procedure applied by parents of severely emotionally disturbed children in a home environment. *Behavioral Disorders, 5*, 79–85.

Singer, G. S., & Irvin, L. K. (1987). Human rights review of intrusive behavioral treatments for students with severe handicaps. *Exceptional Children, 54*, 46–52.

Singh, N., Watson, J., & Winston, A. (1986). Treating self-injury: Water mist spray versus facial screening or forced arm exercise. *Journal of Applied Behavior Analysis, 19*, 403–410.

Solnick, J., Rincover, A., & Peterson, C. (1977). Some determinants of reinforcing and punishing effects of timeout. *Journal of Applied Behavior Analysis, 10*, 415–424.

Sulzer-Azaroff, B., & Mayer, R. G. (1977). *Applying behavior analysis procedures with children and youth.* New York: Holt, Rinehart, & Winston.

Townsend, R. B. (1984). *School corporal punishment, home discipline, and violence: Some unhealthy relationships.* Paper presented at the annual convention of the National Association of School Psychologists, Philadelphia.

Twardosz, S., & Sajwaj, T. (1972). Multiple effects of a procedure to increase sitting in a hyperactive, retarded boy. *Journal of Applied Behavior Analysis, 5*, 73–78.

Van Houten, R., Axelrod, S., Bailey, J. S., Favell, J. E., Foxx, R. M., Iwata, B. A., & Lovaas, O. I. (1988). The right to effective behavioral treatment. *Journal of Applied Behavior Analysis, 21*, 381–384.

Wahler, R., & Nordquist, V. (1973). Adult discipline as a factor in childhood imitation. *Journal of Abnormal Child Psychology, 1*, 40-56.

Walker, H. M. (1983). Applications of response cost in school settings: Outcomes, issues and recommendations. *Exceptional Education Quarterly, 3*, 47–55.

Walker, H. M., Hops, H., & Fiegenbaum, E. (1976). Deviant classroom behavior as a function of combinations of social and token reinforcement and cost contingency. *Behavior Therapy, 7*, 76–88.

Weilkiewicz, R. (1986). *Behavior management in the schools.* New York: Pergamon Press.

Wells, K., Forehand, R., & Hickey, K. (1977). Effects of a verbal warning and overcorrection on stereotyped and appropriate behaviors. *Journal of Abnormal Child Psychology, 5*, 387–403.

Wood, F. (1978a). The influence of public opinion and social custom on the use of corporal punishment in schools. In F. Wood & K. Lakin (Eds.), *Punishment and aversion stimulation in special education: Legal, theoretical and practical issues in their use with emotionally disturbed*

children and youth (pp. 29–39). Minneapolis: University of Minnesota, Department of Psychoeducational Studies.

Zabel, M. (1986). Timeout use with behaviorally disordered students. *Behavioral Disorders, 12*, 15–21.

Appendix

Council for Children with Behavioral Disorders Policy Statement on the Use of Behavior Reduction Procedures

The Council for Children with Behavioral Disorders (CCBD) serves the interests of children and youth with behavioral disorders. A major concern of this organization is ensuring that these youngsters receive appropriate and effective services. The past two decades have seen increasing use of behavioral treatment services for dealing with children's inappropriate, problematic, and/or oppositional behavior in various settings. These services are based on strategies derived from behavioral, social learning, and applied behavior analysis research. Research clearly indicates that they are effective in improving children's academic and social functioning; in facilitating their behavioral self-control; and in enhancing their access to living a free, successful, normal, and happy life. However, because these procedures frequently are used to control behavior, they also have considerable potential for misapplication and abuse.

The most controversial behavioral procedures are those used to decrease children's inappropriate or problematic behavior. The CCBD Executive Committee has reviewed the literature on these strategies in a paper entitled, *Use of Behavior Reductive Strategies with Children with Behavioral Disorders.* This paper concluded that, although progress has been made toward developing less aversive, intrusive, and restrictive behavior reduction alternatives, this technology has not advanced to the

point where it is clearly effective in all situations with all types of children and with all types of problem behaviors.

CCBD advocates the continued development of more positive behavior reduction alternatives; and where feasible, these should be used. However, it is often difficult for practitioners to decide which, when, where, and how behavior reduction strategies should be administered. Ultimately, such decisions must be decided on a case-by-case basis by qualified professionals. The following recommendations, derived from the literature review, are intended to guide professionals in the appropriate use of behavior reduction procedures:

Behavioral services should be provided in conjunction with appropriate and effective planning.

The needs of the child should determine the particular service he or she receives. The services to be provided should be based upon prior assessment and baseline information and should have precedence in the research literature; the procedures selected should have been demonstrated as effective under similar conditions, with children with similar characteristics (e.g., age, type of disability, intelligence, learning history, repertoires), and with similar target behavior(s). Selection of the particular intervention procedures also should be based on the likelihood of success in consideration of previous interventions attempted, available resources, and training and experience of the practitioner(s) involved in the delivery of services.

Behavioral services should be provided by competent professionals.

Professionals providing services to children with behavior disorders should be fully academically trained in a social services profession and have specific courses related to behavioral interventions. They should have intensive and direct experience with children with behavior disorders, under the supervision of an experienced and qualified mentor. Further, professionals should be fully licensed in the state in which they are providing services. Finally, they should periodically update their skills through professional seminars and academic coursework.

Behavioral procedures selected should be the most effective, but least restrictive and intrusive, available.

The most effective treatment is one that employs the most powerful but safest, least aversive, intrusive, and restrictive procedures available. In selecting and implementing the most effective treatment option(s), professionals should:

a. Identify behaviors to be strengthened, reduced, or eliminated by employing a thorough functional analysis of the youngster's behaviors and the relative frequency with which these occur in various ecological settings and contexts.

b. Identify related variables that may be facilitating or maintaining appropriate and inappropriate behavior.

c. Identify the potential contributions of social models and social expectancies in terms of their maintenance of appropriate and inappropriate behaviors.

d. In cases where behavior is to be reduced, select competing or alternative behaviors to be strengthened which may serve as a replacement for an inappropriate behavior.

e. Document the history of prior interventions and their effects and use this information to select the least aversive, intrusive, or restrictive intervention to attain treatment goals specified in the individualized education plan (IEP).

In cases where more highly aversive, intrusive, or restrictive procedures are being considered to reduce or eliminate a particular problem behavior, professionals should:

a. Consider their use only after a program based on more positive alternatives and an analysis and modification of setting variables (e.g., teacher behavior, space, curriculum, methods of communication, interpersonal interactions) have been attempted and documented as ineffective in reducing the problem behavior.

b. Consider their use only with behaviors that pose immediate danger to a youngster or others and that might result in serious bodily harm, significant destruction of property, or with behaviors that pose a risk of severe and sustained restriction of the individual's opportunity to participate in educational, social, or vocational activities identified in his or her IEP.

c. Refer to a plan to use more aversive, intrusive, or restrictive procedures to a human rights committee composed of personnel who have an appropriate understanding of the procedures and their social, behavioral, and ecological implications in an intervention program.

d. Select procedures that have been empirically documented in the professional and scientific literature as effective for reducing the particular problem behavior displayed by individuals with charac-

teristics and skills similar to that of the youngster whose behavior will be reduced.

e. In the absence of empirical documentation, select interventions producing the least dangerous potential outcomes, including side effects.

f. Implement the procedures only if they have been approved by a human rights committee *and* the youngster's parent or guardian, and if they may be safely and faithfully conducted by qualified personnel in the treatment setting.

g. Monitor and document the effects of the intervention plan and subject these data to frequent and ongoing review by the human rights committee and the youngster's parent or guardian; subject a continuing program to a peer review committee consisting of qualified professionals who are unconnected with the institution, school, or agency providing the services.

h. Continue the use of these procedures only as long as necessary to meet the treatment objectives stipulated in the individual's IEP.

i. Use these procedures only in a program which concomitantly develops the youngster's competing and alternative behaviors and that provides a long-range strategy for maintaining these behaviors and for transferring these to nontreatment settings.

It is further recognized that it is the responsibility of professionals to allow a child to participate as fully as possible in the planning of his or her educational and treatment program. Professionals also are obliged to explain to a child's parents or guardians the specific procedures and rationale of an intervention program. Finally, professionals are responsible for keeping a child's parents or guardians fully and frequently informed regarding their child's progress in the program and for involving them in planning significant changes that must be made to the program.

CEC Mini-Library
Working with Behavioral Disorders

Edited by Lyndal M. Bullock and Robert B. Rutherford, Jr.

A set of nine books developed with the practitioner in mind.

Use this Mini-Library as a reference to help staff understand the problems of specific groups of youngsters with behavioral problems.

- *Teaching Students with Behavioral Disorders: Basic Questions and Answers.* Timothy J. Lewis, Juane Heflin, & Samuel A. DiGangi. No. P337. 1991. 37 pages.
- *Conduct Disorders and Social Maladjustments: Policies, Politics, and Programming.* Frank H. Wood, Christine O. Cheney, Daniel H. Cline, Kristina Sampson, Carl R. Smith, & Eleanor C. Guetzloe. No. P338. 1991. 27 pages.
- *Behaviorally Disordered? Assessment for Identification and Instruction.* Bob Algozzine, Kathy Ruhl, & Roberta Ramsey, No. P339. 1991. 37 pages.
- *Preparing to Integrate Students with Behavioral Disorders.* Robert A. Gable, Virginia K. Laycock, Sharon A. Maroney, & Carl R. Smith. No. P340. 1991. 35 pages
- *Teaching Young Children with Behavioral Disorders.* Mary Kay Zabel. No. P341. 1991. 25 pages.
- *Reducing Undesirable Behaviors.* Edited by Lewis Polsgrove. No. P342. 1991. 33 pages.
- *Social Skills for Students with Autism.* Richard L. Simpson, Brenda Smith Myles, Gary M. Sasso, & Debra M. Kamps. No. P343. 1991. 23 pages.
- *Special Education in Juvenile Corrections.* Peter E. Leone, Robert B. Rutherford, Jr., & C. Michael Nelson. No. P344. 1991. 26 pages.
- *Moving On: Transitions for Youth with Behavioral Disorders.* Michael Bullis & Robert Gaylord-Ross. No. P345. 1991. 52 pages.

Save 10% by ordering the entire library, No. P346, 1991. Call for the most current price information, 703/264-9467.

Send orders to:
The Council for Exceptional Children, Dept. K10350
1920 Association Drive, Reston VA 22091-1589